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**WHAT'S IN YOUR HEAD? Becoming a Trader**

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The field of trading psychology is generally associated with techniques to help traders manage their emotions, improve discipline and sharpen decision-making. Forgotten, however, is that the science of psychology began as an experimental discipline to identify principles of learning. Since those pioneering 19th century investigations, psychology has made significant strides in understanding how we acquire information and skills. In this article, we will explore some of these advances and illustrate their implications for the development of trading prowess, drawing upon our experience of coordinating a training program for professional traders.

Before we describe the training program that we coordinate at our proprietary trading firm, a disclaimer is in order. All too many articles that appear in trading publications are thinly veiled promotions for the authors' products or services. Such infomercials must be read with more than the normal grain of salt. In describing our training program, we are not soliciting applications from would-be traders; nor are we trying to convince readers to abandon their day jobs and pursue trading as a full-time occupation. Indeed, as you will see below, we have numerous reasons – based on our experience – for dissuading people from such courses of action. Instead, we use our training program to illustrate the learning process involved in the development of trading talent and the ways in which psychology can facilitate that learning curve.

The Learning Process

When we began the training program, we drew upon Brett's prior experience as a faculty member of a medical school and divided the curriculum into introductory ("internship") and advanced ("residency") phases. A popular phrase that captures the philosophy of medical education is "see one, do one, teach one." The idea is that people learn first by observing, then by supervised doing, and finally by instructing others. It's not that didactics are unimportant – book learning and lectures make up the lion's share of a medical student's first years of education – but when it comes to application, nothing substitutes for the hands-on experience of seeing and doing.

Research in the psychology of learning strongly supports this educational



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approach. Studies conducted and reviewed by K. Anders Ericsson, Ph.D., find that the acquisition of expertise in most fields (art, sports and games of skill such as chess) is a function of deliberative practice. Experts, such as Olympic performers and chess masters, tend to spend far more time than non-experts in structured, goal-oriented practice with feedback. Indeed, University of California, Santa Cruz, researcher Dean Keith Simonton, Ph.D., cites a wealth of evidence that suggests it takes ten years of such immersion in a discipline before greatness can be achieved. Given this reality, it is clear that no amount of lecture time or reading, in and of itself, can produce a skillful surgeon, artist or trader. One learns surgery by observing surgeons, assisting them, practicing techniques on models, conducting simple procedures, and finally graduating to more challenging ones. Similarly, we find that developing trading proficiency begins with observation and repetitive practice.

The introductory phase of the training program consists of intensive exposure to different trading markets. Although much briefer, it is similar to the educational experience that medical students receive during their initial four years of training. It combines didactic instruction with observation of successful traders and structured hands-on trading experience. Each practice trading session is preceded by a set of objectives for the group to work on, such as "limiting the size of losing trades." The feedback at the end of the session then focuses on the traders' ability to meet the objectives.

SIDEBAR

Having a Mentor

Several factors have convinced us that mentorship is an essential element in the development of trading prowess.

Preparation for unforeseen events: Distributions of price changes in financial markets display "fat tails." These unusual events occur much more often than one would expect under conditions of normality. Such events – large swings that occur in the face of news events or out-of-line economic reports – are difficult to prepare for because they occur so infrequently. Experienced mentors can help new traders identify markets that are trading unusually and adjust trading accordingly. Just as attending physicians help medical students identify diseases that don't conform to textbook presentations, senior traders can orient new traders to markets that are moving atypically.

Creation of a constructive learning environment: Traders are by nature competitive and often are unwilling to voice uncertainty, doubt or discouragement. Mentors provide traders with an open forum to voice ideas about what they may or may not be seeing in the market place. They also provide a safe and private setting for constructive criticism in which new traders need not feel threatened or harshly judged.

Support: As trading has increasingly moved from the pit – a very close interpersonal medium – to the screen, it has become difficult for professional traders to benefit from the accumulated wisdom of peer traders. Mentorship was frequently built into the process of becoming a pit trader, as experienced traders would oversee – and even stake – their protégés. This provided substantial support in an environment that was otherwise harsh and competitive. Traders learning their craft on the screen

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frequently lack this support, yet compete in an environment that is no less challenging.

Master the Various Elements

Structuring the practice with goals and rapid feedback is essential to the learning process. Research in sports psychology finds that athletes gain significantly more from practice if it includes specific goals and prompt feedback regarding the meeting of these goals. An interesting set of studies reviewed by Ericsson found that championship chess players rarely played for fun. When they played, it was to study openings, hone their end game, etc. Similarly, passively following markets is unlikely to have the same benefits as directed practice focusing on concrete guidelines for entering and exiting trades.

There may be a second reason why chess masters avoid leisure play. Research summarized by Singer, Hausenblas, and Janelle in their excellent text, *Handbook of Sport Psychology* (2nd ed.), finds that learning is enhanced by breaking tasks down into component pieces and working systematically upon each. For example, a beginning chess player would not start his or her training by exclusively playing entire games. Rather, there would be a concentrated focus on learning opening moves and strategies, followed by dedicated attention to the middle game, defenses and endings. Training in the martial arts is similar, where intensive practice of individual movements precedes practice and tournament matches.

Our experience is that beginning traders too often want to learn trading by actually trading. This is similar to the martial arts novice starting with tournament competition. Segmentation of the trading process into component elements, such as pattern recognition, order execution and trade management – combined with intensive rehearsal of the segments – is far more likely to yield long-term skill acquisition.

It's All About the Practice

Research summarized by Timothy Lee and colleagues in the *Handbook of Sport Psychology* also notes that simulations are valuable in skill development. A number of trading software programs, such as eSignal, offer simulation modules that allow traders to rehearse strategies in real-time. While such simulation cannot fully capture the pressures of trading with real money on the line, it is an effective bridge between casual paper trading and "going live." More importantly, it permits repetitive practice on the aforementioned components of trading – with built-in profit/loss (P/L) feedback.

Lee and colleagues also note that mental rehearsal has been found to produce effective training results in the sports world, especially with respect to the cognitive elements of performance. A trader, for example, can effectively rehearse the mindset he would like to adopt during trading (and his self-instructions during trading) by structuring guided-imagery sessions that simulate a segment of a trading day. Over the course of such practice, new traders learn many things about themselves – how they handle risk and frustration, how they perform under scrutiny and how well they can stick to basic trading rules. Most important, like medical students, they learn the answers to two questions:

- Do I really want to do this for a living?

- If so, which area of trading would I choose for a specialty?

Finding a Niche

The importance of this latter question cannot be overstated. One sometimes hears that there is no difference between trading one market and trading another: "Trading is trading." Our experience is quite different. Traders who are successful in one market segment (such as equity indexes) do not necessarily find success tackling another segment (such as forex). Just as the specialties of medicine involve different combinations of interests and aptitudes, the various types of trading (scalping, spread trading, position trading, discretionary trading, systems trading) call upon unique skill sets. There is no better way to discover the fit between a trader, trading style and market than to actually observe one's own enthusiasm, frustration and progress across different situations.

The importance of finding a fit between traders and trading styles and markets also is supported by psychological research. Studies reported by Simonton find that highly successful performers are characterized by an early aptitude and passion for their fields. Traders are most likely to succeed at trading when they find a niche that piques their interest and motivation. We find that traders are most likely to progress in their training if they feel a special affinity for the market they are trading and the way they trade in it.

Advanced Learning

Once a medical student finishes the initial four years of training, he is not qualified to practice and, indeed, cannot even obtain a license. Practice normally begins only after another several years of residency training in which the new doctor develops proficiency in a specialty.

Just as resident physicians assume greater responsibility as their training progresses, advanced students of trading start with very small positions and gradually grow their position sizes. The medical dictum, "Above all else, do no harm," applies equally to new traders. The goal at the start is to survive one's learning curve. A worthwhile philosophy for new traders is that a rise in position size must always be justified by recent trading results. You must earn the right to trade two lots before abandoning a one-lot default; you must show profitability in simulation mode before going live. The goal is not to trade, but to trade successfully.

Earlier we mentioned that two questions are answered during the initial weeks of learning: the desire to be a trader and the area of trading to be selected as a specialty. One question that is not addressed is whether or not aspiring traders actually possess the skills needed to be financially self-supporting as a trader. There is a good reason for this, once again grounded in psychological research. If the development of competence and expertise requires sustained deliberative practice, it is unlikely that students will have enough exposure in a brief time to see a meaningful emergence of skills – especially if the practice is scattered among different skill components and trading specialties. A research program conducted by Dr. Arthur Reber at Brooklyn College found that it took thousands of trial-and-error sequences with immediate feedback before people could learn to recognize and anticipate complex patterns within data. To amass those trials under realistic trading conditions – and to observe the emergence of skill – requires months, not weeks.

SIDEBAR

Personality Characteristics of Success

Listed below are several of the personality characteristics that researchers have found to be correlated with high degrees of success in a chosen field:

A high degree of belief in oneself – D. W. MacKinnon concludes, “The truly creative individual has an image of himself as a responsible person with a sense of destiny about himself as a human being.”

Capacity for sustained effort – An early investigation by Catharine Cox found that, “Youths who achieve eminence are characterized not only by high intellectual traits, but also by persistence of motive and effort, confidence in their abilities and great strength or force of character.”

Aggressiveness – Dean Keith Simonton has observed, “Attainment of distinction in any endeavor is a function of both cognitive and motivational traits of character. For both creators and leaders, eminence is a positive function of intelligence and aggressiveness.”

Passion for their pursuits – Simonton further finds that, “Geniuses cannot spend so many hours without an inherent passion for what they do. Therefore, we might do better to say that all the motives that can stimulate the energies of the [creative] human being all converge on a single activity, a monomaniacal preoccupation.”

Time Is a Predictor of Success

Trading is not unique in the length of its learning curve. Studies of young chess masters have found that the single most important predictor of a player's rating is the number of hours spent in serious study and practice. Janet Starkes at McMaster University in Ontario, Canada, and her research colleagues examined the facets of such practice across such domains as figure skating and musical performance. She found that practice was most predictive of success when the practice was associated with high levels of effort and concentration. It is thus the quality of rehearsal – and not just the quantity – that appears to be important in advanced training. One can practice for months under less-than-optimal conditions of a challenge and fail to see meaningful skill development.

This is where coaching is particularly important in such fields as sports, musical training and the martial arts. It is very difficult for students to gauge the level of challenge that is sufficient to build skills and yet not so difficult as to generate undue frustration and discouragement. A useful analogy is bodybuilding: setting a weight machine at a setting that is too low will not build strength; setting it too high can promote harm. The most helpful training is often at levels of difficulty that lie just beyond the student's comfort level – a level that can be set and monitored by a coach.

Going to School

For this reason, formal instruction and supervision is a common feature of advanced learning process across performance domains. In the trading world, we have similarly found that sitting traders in front of a screen and expecting that they will pick up trading simply by observing markets and trying to trade is not realistic. (Would we sit a new chess player in front of a board and say, “Go at it?”) Successful training requires mentorship, which entails a one-to-one relationship that adapts the learning process to

the skills and progress of individual traders. (See sidebar: Having a Mentor.)

Keeping Records

Traders also can benefit from the collection of data regarding their trading. Such data include basic P/L, but might also incorporate detailed information on trading patterns under varying market conditions. For example, a journal might include not only a summary of trades made during the day, but a description of the market conditions accompanying each of those trades (morning/afternoon, trending/non-trending, high/low volatility). This allows traders to review how successfully they've traded various markets, highlighting both strengths and weaknesses that can form the basis for future learning goals.

There is another, subtle benefit to the collection of trading data that is grounded in learning research. The progress that is made by traders is first visible by examining their patterns of trading; only later does it show up as distinct improvements in P/L. To the casual observer, it may look like new traders have made a sudden leap – as if a light bulb went on in their heads – when P/L finally goes green. In fact, however, this is likely the last step in a learning process that first manifests itself in cognitive and behavioral change. This is precisely the same change process that we observe in counseling and psychotherapy. Before depressed people exhibit functional improvement (i.e., gains in their work and relationship functioning) in cognitive therapy, for example, they first change how they process information (monitoring cognitive distortions), and then alter how they respond to life situations (challenging negative assumptions by testing them out in reality). These changes are not immediately observable, but establish an important foundation for visible, behavioral changes at home and in the workplace.

Traders, too, make important internal changes that eventually show up on the bottom line. A trader who loses money during weeks with large wins and large losses has made a valuable change when the size of those oscillations decreases – even if overall weekly P/L remains relatively constant. The reason for this is that the large oscillations are frequently due to expanded holding times that reflect stubbornness in getting out of winning and losing trades. Occasionally, the refusal to take winners will produce large gains, but over time it also produces outsized losses. If the trader makes progress in containing the perfectionism and frustration underlying this stubbornness, those oscillations will dampen.

Lessons for Aspiring Traders

Earlier in the article, we explained that we were not trying to recruit traders or encourage people to enter the trading field. There are several reasons for this:

- The learning process does not appear to be any shorter for traders than it is for successful musicians, athletes or chess players. It is not unusual for significant P/L improvements to take several months to occur, with consistent profitability requiring even more time. Significant effort and plenty of patience are needed to undertake such an effort. Most traders fail at trading for the same reason that dieters fail to lose weight. It is much easier to initiate a directed effort than to sustain it.
- If a professional trading firm with advanced technology and in-house mentors needs significant time to facilitate trader profitability, the odds of

traders achieving similar results on their own can be slim indeed. Expecting to develop a high level of competency from a part-time home experience is no more realistic than expecting to become a world-class athlete or musician under similar conditions. It is difficult to identify a single successful athlete, scientist or artist who accomplished great things without full-time effort and ongoing coaching or instruction.

- The duration of the learning curve means that traders must have unusually deep pockets to sustain the educational process. A significant number of individual traders are poorly capitalized and, indeed, look to trading as a way to make large sums of money relatively quickly. On the contrary, students of the markets can expect a sustained period of time to elapse before they earn a paycheck large enough to cover their living costs and trading expenses. Failure to account for this business reality is a major reason why individual traders experience a low success rate.
- Our experience is that the learning process in trading is not one of a distinct beginning and end. In this sense, it is much like medicine, which requires ongoing education to keep up with ever-changing technological and pharmaceutical advances. Traders whose learning takes place in a bull market find themselves challenged in bear markets; those who grew up with volatility suddenly find themselves trading like rookies in bracketing markets. Success at trading is not just a matter of making oneself successful; it is a continual challenge to remake oneself as markets change. Only an unusual commitment to lifelong development – and a true love of the learning process – can sustain such an effort.

Do You Have What It Takes?

Research conducted by Dr. Arnold Ludwig and reported in his book, *The Price of Greatness*, offers a summary of the factors that account for high levels of achievement in different fields (see sidebar: *Personality Characteristics of Success*). Among the factors he cites are “special ability” – “unique talents” – and a “drive for supremacy” where one is willing to tackle seemingly insurmountable obstacles. This is also what we have detected in our training efforts. Persistence, yoked to specific cognitive and behavioral talents, distinguishes those who progress from those who do not. Training cannot supply talent where there is none, nor can it provide an abiding drive for success. What it can do is channel these forces and mold them into a sustained learning curve. Psychological research suggests that structured practice, prompt feedback and continuous mentorship catalyze this learning curve across performance fields. These factors cannot guarantee success, but their absence almost surely will result in failure.



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